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REMARKS

In the Office Action, the Examiner noted that claims 1-21 are pending in the application, and that claims 1-5, 9-11, 14, and 17-21 are rejected. The Examiner objected to claims 6-8, 12-13, and 15-16. By this response, claims 1, 4, 12, 15, and 17 are amended, claims 3, 10-11, 14, and 19 are cancelled, and claims 2, 5-9, 13, 16, 18, and 20-21 continue unamended. Claims 22-24 are newly added. In view of the above amendments and the following discussion, Applicants submit that none of the claims now pending in the application are indefinite under the provisions of 35 U.S.C. §112, anticipated under the provisions of 35 U.S.C. §102, or obvious under the provisions of 35 U.S.C. § 103. Thus, Applicants believe that all of these claims are now in condition for allowance.

I. OBJECTIONS

The Examiner has objected to dependent claims 6-8, 12-13, and 15-16 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Applicants thank the Examiner for indicating allowable subject matter and have rewritten claims 12 and 15 into independent form, including all the limitations of cancelled claim 10. Claims 13 and 16 respectively depend from claims 12 and 15, and recite additional features therefor. Thus, Applicants contend that claims 13 and 16 are allowable, since each claim depends from independent claims 12 and 15. As such, Applicants respectfully request that the objection to claims 12-13 and 15-16 be withdrawn.

Claims 6-8 depend from claim 1 and recite additional features therefor. Applicants believe independent claim 1, from which each of these dependent claims depends, is allowable over the prior art of record for the reasons set forth below. Thus, Applicants contend that claims 6-8 should distinguish over the prior art of record since each claim depends from independent claim 1. As such, Applicants respectfully request that the objection to claims 6-8 be withdrawn.

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II. REJECTION OF CLAIM UNDER 35 U.S.C. §112

The Examiner rejected claim 3 as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicants regard as the invention. Specifically, the Examiner stated that there is insufficient antecedent basis for the term "beam steering parameters" in the second line of the claim 3.

Applicants have cancelled claim 3 and have substantially incorporated the limitations therein into claim 1. Notably, claim 1 includes the phrase "adapting beam steering parameters associated with the medium to reduce optical loss in response to the optical loss parameter." The term "beam steering parameters" is not modified by a definite article and does not appear before the aforementioned clause of claim 1. As such, Applicants contend that an antecedent basis is not required for the term "beam steering parameters." Thus, Applicants submit that claim 1 fully satisfies the requirements of 35 U.S.C. § 112.

III. REJECTION OF CLAIMS UNDER 35 U.S.C. §102(e)

The Examiner rejected claims 1, 3-5, 9-10, 14, 17, and 19-21 as being anticipated by Fan (United States Patent 6,449,406, issued September 10, 2002). In particular, the Examiner alleged that Fan discloses the steps of "arranging a plurality of light beams according to a parallel configuration; diverting a first portion of the parallel light beams to a first imaging device...; propagating a remaining portion of the propagated parallel light beams through a medium; diverting a first portion of the propagated light beams to a second imaging device...; and determining power loss using the data provided by the first and second imaging devices." (Office Action, page 3). The rejection is respectfully traversed.

Fan generally teaches a micromachined optomechanical switching cell. (See Fan, Abstract). In particular, Fan shows an architecture of a micro electro mechanical systems (MEMS) optical switch, where beamsplitters (1040, FIG. 10) are used to deflect a portion of optical beams to both an input photodetector array and an output photodetector array. (Fan, col. 10, lines 56-63; FIGs. 10A-C). Fan teaches a third photodetector array (1005, FIG. 10) disposed behind MEMS mirrors, the output of which

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can be used with the outputs of the input and output photodetector arrays to detect possible failures in the MEMS mirrors. (Fan, col. 11, lines 15-16). Fan does not describe any process or device for taking corrective measures in response to a MEMS mirror failure. (See Fan, col. 10, line 56 through col. 11, line 26; FIGs. 10A-C).

In view of the foregoing, Fan does not teach each and every element of Applicants' amended claim 1. Namely, Fan does not teach or suggest adapting beam steering parameters associated with a medium to reduce optical loss in response to an optical loss parameter determined using data provided by first and second imaging devices. Specifically, Applicants' claim 1 positively recites:

"A method, comprising:
arranging a plurality of light beams according to a parallel configuration;
diverting a first portion of said parallel light beams to a first imaging device;
propagating a remaining portion of said parallel light beams through a medium;
diverting a first portion of the propagated parallel light beams to a second imaging device;
determining an optical loss parameter using imaging data provided by said first and second imaging devices; and
adapting beam steering parameters associated with the medium to reduce optical loss in response to the optical loss parameter." (Emphasis added)

While the device of Fan is capable of detecting a failed MEMS mirror, Fan does not teach or suggest adapting any parameters associated with the MEMS mirrors in order to reduce optical loss. Rather, Fan merely identifies a MEMS mirror failure. Fan is devoid of any teaching or suggestion of adapting beam steering parameters associated with a medium in response to an optical loss parameter. Identifying a MEMS mirror failure fails to teach or suggest adapting beam steering parameters associated with a medium in response to an optical loss parameter.

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim." Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added). Since Fan does not teach adapting beam steering parameters associated with a medium to reduce optical loss in response to an optical loss parameter determined using data provided by first and second imaging devices,

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Fan does not teach each and every element of Applicants' invention as recited in claim 1. Therefore, Applicants contend that claim 1 is not anticipated by Fan and, as such, fully satisfies the requirements of 35 U.S.C. §102.

Amended claim 17 recites a power monitoring apparatus having features similar to those recited in claim 1. Namely, claim 17 recites first and second steering devices for respectively providing first and second indicia that are sufficient to determine an optical loss parameter for adapting a steering device to reduce optical loss. Therefore, for the same reasons cited above, Applicants contend that claim 17 is also not anticipated by Fan and, as such, fully satisfies the requirements of 35 U.S.C. §102.

Claims 10 and 14 have been cancelled. Claims 4-5, 9, and 19-21 depend, either directly or indirectly, from claims 1 and 17 and recite additional features therefor. Since Fan does not anticipate Applicants' invention as recited in claims 1 and 17, dependent claims 4-5, 9, and 21 are also not anticipated and are allowable.

IV. REJECTION OF CLAIMS UNDER 35 U.S.C. §103(a)

The Examiner rejected claims 2, 11, and 18 as being unpatentable over Fan. In particular, the Examiner stated that Fan does not disclose Indium Gallium Arsenide (InGaAs) photodetectors. The rejection is respectfully traversed.

Claim 11 has been cancelled. Claims 2 and 18 depend from claims 1 and 17 and recite additional features therefor. As discussed above in Section III, Fan does not teach or suggest Applicants' invention as recited in either claim 1 or claim 17. Namely, Fan fails to teach, suggest, or otherwise render obvious adapting beam steering parameters associated with a medium to reduce optical loss in response to an optical loss parameter determined using data provided by first and second imaging devices. Rather, Fan is concerned with various physical architectures of MEMS optical switches. Therefore, Applicants contend that claims 2 and 18, which depend from claims 1 and 17, are patentable over Fan and, as such, fully satisfy the requirements of 35 U.S.C. §103(a).

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CONCLUSION

Thus, Applicants submit that none of the claims presently in the application are indefinite under the provisions of 35 U.S.C. §112, anticipated under the provisions of 35 U.S.C. §102, or obvious under the provisions of 35 U.S.C. § 103. Consequently, Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone either Mr. Robert M. Brush, Esq. or Mr. Eamon J. Wall, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

9/25/03

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